



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,970	06/30/2003	Thomas Edward Dinan	SJO9-2000-0009US2	1468
32112	7590	01/11/2006	EXAMINER	
INTELLECTUAL PROPERTY LAW OFFICE 1901 S. BASCOM AVENUE, SUITE 660 CAMPBELL, CA 95008				TUGBANG, ANTHONY D
ART UNIT		PAPER NUMBER		
3729				

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

88

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/610,970	DINAN ET AL.	
	Examiner	Art Unit	
	A. Dexter Tugbang	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS,  
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on \_\_\_\_.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 11-18 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 11-18 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/21/03</u> .	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: ____.
--	--

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al 6,069,775 and Sasaki 6,154,347.

Regarding Claim(s) 11, Chang discloses a method for fabricating a magnetic head comprising: fabricating a read head upon a substrate (see Fig. 22); fabricating a P1 pole (318 in Fig. 32) upon the read head; fabricating a write gap layer 334 upon the P1 pole; fabricating a block of material (photoresist 368) upon the write gap layer, the block of material having a sidewall disposed proximate a P2 pole tip location (see Fig. 36); fabricating a seed layer 366 upon the sidewall; electroplating a P2 pole tip material 342 upon the seed layer, whereby a P2 pole tip 342 is formed having a width W that is comprised of a thickness of the seed layer material and a thickness of the electroplated material (see Fig. 39); fabricating an induction coil proximate the P2 pole tip (see Fig. 34).

Regarding Claim(s) 17, Chang further teaches that the P2 pole tip is fabricated within a P2 pole tip trench (opening in photoresist 368 shown in Fig. 36 not labeled) having a width that is slightly wider than the width of the P2 pole tip. The P2 pole tip trench is slightly wider in width than the P2 pole tip to the extent that the material of the P2 pole tip is formed within the P2 pole tip trench.

Chang does not teach fabricating a P3 pole above the induction coil in magnetic interconnection with the P2 pole tip and fabricating an encapsulating layer above the P3 pole (as required in the last 3 lines of Claim 11).

Sasaki teaches that a combination MR read head that is merged with a write head to form an overall magnetic head can include fabricating a P3 pole above the induction coil and fabricating an encapsulating layer above the P3 pole. Both of the magnetic head devices of Chang and Sasaki achieve the very same performance characteristics of reading and writing information to a recording medium. The advantage of the manufacturing process of Sasaki, including the additional P3 pole and encapsulating layer, is to improve the balance between the performance of the read head and the performance of the write head (see col. 2, lines 5-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Chang by including the P3 pole and encapsulating layer, as taught by Sasaki, to positively improve the balance between the performance of the read head and the performance of the write head.

Regarding Claim(s) 12-15 as to the specific thicknesses, or range of thicknesses, of the seed layer and the electroplated material recited in Claims 12-15 are each considered to be an effective variable within the level of ordinary skill in the art of manufacturing magnetic heads with seed layers and electroplated materials. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the specific range of thicknesses for the seed layer and the electroplated material (as recited in each of Claims 12-15), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Furthermore, the

specific thicknesses of the seed layer and the electroplated material appear to have no impact on the manufacturing method, particularly when compared to the prior art manufacturing methods of both Chang et al and Sasaki.

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al and Sasaki, as applied to claim 11 above, and further in view of Koshikawa et al 6,199,267.

Chang, as modified by Sasaki, teaches the claimed manufacturing method as relied upon above in Claim 11, further including that the block of material (photoresist 368 in Chang) is removed from the write gap layer following the electroplating of the P2 pole tip material. The modified Chang method does not teach that the P1 pole is notched in an ion milling step.

Koshikawa teaches an ion milling step of notching a P1 pole tip 7 (shown in Fig. 2D and 2E) to provide alignment of the P1 pole tip with the P2 pole tip and an accurate track width (see col. 2, lines 38-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Chang by including the ion milling step of Koshikawa, to advantageously allow alignment of the P1 pole tip with the P2 pole tip and provide an accurate track width.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Sasaki, as applied to claims 11 and 14 above, and further in view of Tran 5,875,542.

Chang, as modified by Sasaki, teaches the claimed manufacturing method as relied upon above in Claims 11 and 14. The modified Chang method does not mention what material composition is made up of both the seed layer and the P2 pole tip.

However, Tran teaches that a seed layer 47 (in Fig. 3C) and a P2 pole tip 48 can each be made up of NiFe (see col. 3, lines 3-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the materials of the seed layer and P2 pole tip of Chang by forming each with NiFe, as taught by Tran, to produce art recognized equivalent magnetic heads that perform the same characteristics of reading and writing information to a recording medium.

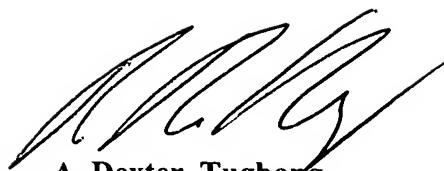
### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**A. Dexter Tugbarg**  
**Primary Examiner**  
**Art Unit 3729**

January 4, 2005